

# FIREPOWER

## INSTRUCTION BOOKLET

This booklet provides game operation, bookkeeping, game adjustment, and diagnostic procedures for FIREPOWER. For installation and special maintenance information refer to the blue-covered game manual. For detailed information refer to Williams Solid State Flipper Maintenance Manual.

### SPECIAL CONSIDERATIONS WHEN REPLACING CIRCUIT BOARDS

#### CPU Board

1. Revision level 6 CPU Boards (batteries located on lower right corner of board) or later boards must be used.
2. Must be equipped with green-labeled FIREPOWER PROMs, green-labeled game ROM and green-labeled flipper ROMs.
3. Jumper J4 must be connected and J3 removed.

#### Sound Board

1. Model D 8224 required for speech.
2. Must be jumpered for white-labeled sound ROM operation and be equipped with Sound ROM 3. (Jumpers W2, W5, W7, W9, W10, and W15 connected; W3, W4, W6, W8, W11, W12, and W13 removed)

#### Power Supply Board

1. Fuse F4 (10A SB) for flipper solenoids must be installed.

#### Optional Speech Module

1. Requires 5T4971 (IC7), 5T4972 (IC5), and 5T4973 (IC6) speech ROMs.

### GAME OPERATION

\*Indicates adjustable features

**Game Over Mode** - Turn game ON; player scores show zero, high score to date\* alternates with player 1 score, player 1 up lamp flashes, game over lamp lights, all playfield lamps except for credit lamp cycle in attract mode.

**Credit Posting** - Insert coin; knocker sounds, number of credits displayed. If maximum credits\* exceeded by coin or high score to date\*, credits are posted correctly, coin lockout deenergized until remaining credits are below maximum. No credits may be won and coins are rejected while lockout is deenergized.

**Game Start** - Push credit button; start-up tune played, ball served, credit display reduced by one, player 1 up lamp flashes until first scoring switch is made, ball in play shows 1. Pushing credit button before ball 2 displayed allows additional players.

**MULTI-BALL** and **LANE CHANGE** are trademarks of Williams Electronics, Inc.

**Bonus Advance** - "F-I-R-E" rollovers when not lit, flashing "1-6" targets, left and right inside rollovers (3 advances when lit), and left and right outside rollovers. Bonus multiplier advanced and FIRE insert lit by spotting "F-I-R-E". "F-I-R-E" lamps rotate by actuating right flipper (**LANE CHANGE™** feature).

**FIREPOWER** - Making three POWER targets scores 10,000 and lites POWER insert, left and right inside rollovers, and \*ball saver kicker ON. Liting FIRE and POWER inserts scores and advances FIREPOWER bonus (5,000 or lit values of 10, 30, and 50,000). Outlane Special lit when \*30, or 50,000 bonus collected.

**"1-6" Targets** - \*Making "1-3" or "4-6" or same ball lights ball saver kicker ON. Spotting "1-6" lights ball saver kicker ON\*, flashes two eject holes, lights spinner, and alternately lights two jet bumpers; adjustable to flash eject holes one at a time (always one at a time once **MULTI-BALL** play is achieved). Spotting "1-6" twice on the same ball lights all jet bumpers.

**Eject Holes** - Making eject hole when flashing locks up ball and new ball released per following order: from ball ramp, flashing eject hole, unlit eject hole. Locking up all balls in eject holes initiates **MULTI-BALL** play. To minimize multiple player interaction, lit and flashing eject holes are reallocated from ball to ball as required: flashing lamp to empty eject hole if possible; lit lamp to occupied eject hole if possible.

**Extra Ball** - Maximum of two Extra Balls per ball. Lighting \*5x or making "F-I-R-E" with 5x lit lights center POWER target for Extra Ball. Making target when lit awards Extra Ball.

**Tilts** - Ball in play tilted on first closure of Playfield and Ball Roll tilts and third\* closure of Plumb Bob. Slam Tilt returns game to game over.

**Memory** - "F-I-R-E" lanes, FIRE insert, POWER Target lamps, POWER insert, \*FIREPOWER bonus lamps, \*lit target arrows, eject hole lamps.

**End of Game** - Match Digits\* appears in ball in play display, \*credit awarded for match. Exceeding high score to date awards \*three credits. Match, High Score to Date, and Game Over sounds made as appropriate. Balls released from eject holes and are placed on ball ramp before new game can be started.

With optional Speech Module, the following phrases are produced during game play:

#### ACHIEVEMENT

Game start, collecting FIREPOWER bonus  
 Making "F-I-R-E"  
 Lighting POWER  
 Spotting "1-6" lamps  
**MULTI-BALL** play  
 Winning Extra Ball  
 Making Special  
 Tilt  
 High Score to Date

#### PHRASE

FIREPOWER.  
 FIRE.  
 POWER.  
 Enemy destroyed.  
 Fire 1, 2, 3.  
 You won one mission.  
 Mission accomplished.  
 You are destroyed.  
 FIREPOWER mission accomplished.

#### Game Over

#### Random phrase

You destroyed FIREPOWER.	Mission destroyed you.
Enemy destroyed you.	Enemy power won.
Mission 213 accomplished.	You destroyed enemy mission.
You are enemy.	Enemy mission.
Enemy fire destroyed you.	You won, FIREPOWER destroyed.
Fire destroyed you.	FIREPOWER destroyed.

#### BOOKKEEPING AND EVALUATION TOTALS

(Functions 01-12)

1. In game over mode, set alternate-action switch to AUTO-UP (out) and depress ADVANCE pushbutton. Test 04 is indicated in number of credits display, Function 00 in ball in play display, and game identification in Player 1 display.

2. Operate the **ADVANCE** pushbutton to display each function on the ball in play display (see Table 1) and record each total from Player 1 display. (To review a total that has been advanced past, set alternate-action switch to **MANUAL-DOWN** (in) and operate the **ADVANCE** pushbutton.)
3. Calculate the following if desired:  
 $\% \text{ Paid Credits} = \text{Function 04} \div \text{Function 08}$
4. Turn the game **OFF** and back **ON** to return to game over mode.
5. To change current High Score to Date to value of Function 13, momentarily depress **HIGH SCORE RESET** pushbutton.
6. To zero Functions 01-11, see page 7

## **GAME ADJUSTMENT PROCEDURE**

(Functions 13-35)

*Coin door must be open to change settings.*

1. In game over mode, set alternate-action switch to **AUTO-UP** (out) and depress **ADVANCE** pushbutton. Test 04 is indicated in number of credits display, Function 00 in ball in play display, and game identification in Player 1 display.
2. To **raise** Function number in ball in play display, operate **ADVANCE** pushbutton with switch set to **AUTO-UP** (in). To **lower** Function number operate **ADVANCE** with it set to **MANUAL-DOWN** (out).
3. With desired Function indicated in ball in play display, **raise** value in player 1 display by operating credit button with switch set to **AUTO-UP** (out); **lower** value by operating credit button with it set to **MANUAL-DOWN** (in). Value left of Player 1 display is new setting. For values see Table 1 and (for pricing) Table 2.
4. Repeat steps 2 and 3 until all required adjustments have been made.
5. Turn game **OFF** and back **ON** to return to game over mode.
6. To restore factory settings and zero audit totals, see page 7.

## **DIAGNOSTIC PROCEDURES**

(Display Digits, Lamp, Solenoid, and Switch Tests)

1. In game over mode, set alternate-action switch to **MANUAL-DOWN** (in) and depress **ADVANCE**. All displays should go blank.
2. Momentarily depress **ADVANCE** and set switch to **AUTO-UP** (out). Display Digits test is performed.
3. Momentarily depress **ADVANCE**. Test 01 is indicated on number of credits display and Lamp Test is performed.
4. Set switch to **MANUAL-DOWN** (in) and momentarily depress **ADVANCE**. Test 02 is indicated on number of credits display and solenoid 01 on the ball in play display; solenoid 01 is pulsed by driver board.
5. Operate **ADVANCE** to pulse each solenoid (see Figure 3). Pulse solenoid 08 three times to remove balls from ramp before proceeding to switch test.
6. Set switch to **AUTO-UP** (out) and momentarily depress **ADVANCE**. Test 03 is indicated on number of credits display and stuck switches on ball in play display.
7. See Figure 4. Operate switches; switch number is indicated on ball in play display.
8. Turn game **OFF** and back **ON** to return to game over mode.
9. To set up Auto-Cycle Mode (Display Digits, Lamp, and Solenoid Tests) see page 7.

Table 1. Game Adjustments

FUNCTION	DESCRIPTION	NOTES	FACTORY SETTING
00	Game Identification	1	1497 2
01	Coins, Left Chute (Closest to coin door hinge)	1	—
02	Coins, Center Chute	1	—
03	Coins, Right Chute	1	—
04	Total Paid Credits	1	—
05	Total Specials	1	—
06	Total Replay (Extra Ball) Scores	1	—
07	Match and High Score to Date Credits	1	—
08	Total Credits	1,2	—
09	Total Extra Balls	1,3	—
10	Total Ball Time in Minutes	1	—
11	Total Number of Balls Played	1	—
12	Current High Score to Date	4	550,000
13	Backup High Score to Date	5	550,000
14	Replay 1 Score	6	410,000
15	Replay 2 Score	6	610,000
16	Replay 3 Score	6	0
17	Replay 4 Score	6	0
18	Maximum Credits	7	20
19	Standard and Custom Pricing Control (00-07)	8	02
20	Left Coin Slot Multiplier	8	01
21	Center Coin Slot Multiplier	8	04
22	Right Coin Slot Multiplier	8	01
23	Coin Units Required for Credit	8	01
24	Coin Units Bonus Point	8	00
25	High Score Credits	5	03
26	Match (00=ON, 01=OFF)	—	00
27	Special	—	00
	00 = Awards Credit		
	01 = Awards Extra Ball		
	02 = Awards Points		
28	Scoring Awards	—	00
	00 = Credits at Replay Score		
	01 = Extra Ball at Replay Score		
29	Maximum Plumb Bob Tilts (1-9)	—	03
30	Number of Balls (03 or 05)	9	03
31	"1-6" Targets	9	03
	00 = Eject holes lit singly, no target memory		
	01 = Eject hole pair lit first time, no target memory		
	02 = Eject holes lit singly, targets on memory		
	03 = Eject hole pair lit first time, targets on memory		
32	Ball Saver Kicker ON Lamp	—	01
	00 = Lit from POWER Targets		
	01 = Lit from "1-3" or "4-6" targets on same Ball or spotting "1-6" lamps		
	02 = Lit from "1-6" Lamps		
	03 = Lit from "1-6" Lamps or POWER targets		
33	FIREPOWER Bonus Lamps	—	03
	00 = No lamps lit initially, no lamp memory (extra conservative)		
	01 = 10,000 lamp lit initially, no lamp memory (conservative)		
	02 = No lamps lit initially, bonus lamps on memory (moderate)		
	03 = 10,000 lamp lit initially, bonus lamps on memory (liberal)		
34	Extra Ball Control/Attract Mode Sounds	—	01
	00/10 = No Extra Ball		
	01/11 = Extra Ball when Lit after 5X	} 1st setting = No Attract Mode Sounds 2nd setting = Attract Mode Sounds	
	02/12 = Extra Ball when Lit with 5X		
35	Special Control/Background Sound	—	12
	00/10 = Alternating Special lites when 50,000 FIREPOWER Bonus collected	} 1st setting = no background sound 2nd setting = background sound on	
	01/11 = Alternating Special lites when 30,000 FIREPOWER Bonus collected		
	02/12 = Specials lite when 50,000 FIREPOWER Bonus collected		
	03/13 = Specials lite when 30,000 FIREPOWER Bonus collected		

Notes:

1. Functions 00-11 cannot be changed from the coin door; however, Functions 01-11 can be set to zero as described on page 7.
2. Total Credits (Function 08) is the sum of Function 04 and as applicable, Functions 05, 06, and 07.
3. Total Extra Balls (Function 09) is the sum of the game extra ball feature and Functions 15 and 06, as applicable.
4. Current High Score to Date (Function 12) can be changed to the value of the Backup High Score to Date (Function 13) by operating the HIGH SCORE RESET switch while in the game over mode.
5. Function 13 may be set to any multiple of 10,000 points. Setting Function 25 to zero with Function 13 set to any score but zero permits the High Score to Date feature to operate but no credits are awarded.
6. Functions 14-17 (Replay Scores) may be set to any multiple of 10,000 points. Setting a function to zero disables the replay score point. **Always disable the Replay 4 level first, the Replay 3 level second, etc. The replay levels must be set with ascending values.**
7. Setting Maximum Credits (Function 18) to zero places the game in a free play mode.
8. With Function 19 set to 00, Functions 20-24 must be set manually. Refer to Table 2 for seven standard pricing schemes (selected by values of 01-07 for Function 19) and custom pricing values.
9. For 5-Ball play, it is recommended that Function 31 be set to 02.

**RECOMMENDED SCORE LEVELS**

<b>Levels</b>	<b>Score Card</b>
<b>CREDIT GAMES</b>	
3-Ball:	
*410,000; 610,000	497-36
or 410,000; 620,000; 740,000	497-14
5-Ball:	
(See Note 9)	
500,000; 720,000	497-45
<b>EXTRA BALL</b>	
3-Ball:	
300,000	497-74
5-Ball:	
400,000	497-76
*Factory setting	

Table 2. Standard and Custom Price Settings

COIN DOOR MECHANISM	CREDITS	FUNCTION						
		19	20	21	22	23	24	
Twin-Quarter Quarter, Dollar, Quarter	1/25¢, 3/50¢, 7/\$1	00	03	12	03	02	12	
	1/25¢, 3/50¢, 7/\$1 coin only	00	03	14	03	02	00	
	1/25¢, 7/\$1 coin only	00	01	07	01	01	00	
	1/25¢, 3/50¢, 6/\$1	00	01	04	01	01	02	
	1/25¢, 6/\$1 coin only	00	01	06	01	01	00	
	•1/25¢, 5/\$1	05	01	04	01	01	04	
	1/25¢, 5/\$1 coin only	00	01	05	01	01	00	
	•1/25¢, 4/\$1	02	01	04	01	01	00	
	•1/50¢, 3/\$1	01	01	04	01	02	04	
	1/50¢	00	01	04	01	02	00	
1DM, 5DM, 2DM	•1/1DM, 3/2DM, 10/5DM	03	09	45	18	05	45	
	2/1DM, 5/2DM, 14/5DM	00	13	65	26	05	65	
20-Cent, 50-Cent	1/20¢, 3/50¢	00	06	00	15	05	00	
1 Franc, 10 Franc, 5 Franc	•1/2F, 3/5F only, 8/10F only	04	01	16	06	02	00	
	•1/25¢, 4/1G	06	01	00	04	01	00	
25 Cent,	1/25¢, 5/1G	00	01	00	04	01	04	
1 Guilder,	•1/50Y, 2/100Y	07	01	00	02	01	00	
50 Yen, 100 Yen	1/1F, 3/2F	00	01	01	01	01	02	
1 Franc or	1/1F	00	01	01	01	01	00	
Twin-1 Franc	•1/5F, 2/10F	07	01	00	02	01	00	
5 Franc,	1/10F	00	01	00	02	02	00	
10 Franc	•1/2F	02	01	04	01	01	00	
Twin-2 Franc	•1/10F, 2/20F	07	01	00	02	01	00	
10, 20 Franc	1/3S, 2/5S	00	02	00	02	05	00	
Twin-1 Sucre								

•Indicates standard price settings by adjusting only Function 19. For other price settings, set Function 19 to 00 and set Functions 20 through 24 to the values indicated in the chart.

## RESETTING AUDIT TOTALS AND ADJUSTMENTS; INITIATING AUTO-CYCLE MODE

1. In game over mode, set the alternate-action switch to MANUAL-DOWN ( in ) and momentarily depress the ADVANCE pushbutton. All displays should go blank.
2. Remove the backglass and unlatch and open the insert door.
3. Set all switches on the MASTER COMMAND slide switch to OFF (move to the right).
4. Set switch on MASTER COMMAND switch to ON (move to left):
  - a. To zero audit totals (Functions 01-11) set switch 8 to ON.
  - b. To restore factory settings **and** zero audit totals, set switch 7 to ON. *Coin Door must remain open to restore factory settings.*
  - c. For Auto-Cycle Mode set switch 6 to ON.
5. Momentarily depress MASTER COMMAND ENTER pushbutton. The LEDs should blink once.
6.
  - a. After zeroing audit totals turn game OFF and ON to return to game over mode.
  - b. After restoring factory settings, turn game OFF and ON twice to return to game over mode.
  - c. To initiate Auto-Cycle Mode, set alternate-action switch to AUTO-UP (out) and momentarily depress the ADVANCE pushbutton. Each cycle of this mode sequences through display digits test, flashes all multiplexed lamps 64 times and pulses each solenoid. To terminate the Auto-Cycle mode and go to game over, turn the game OFF and ON.

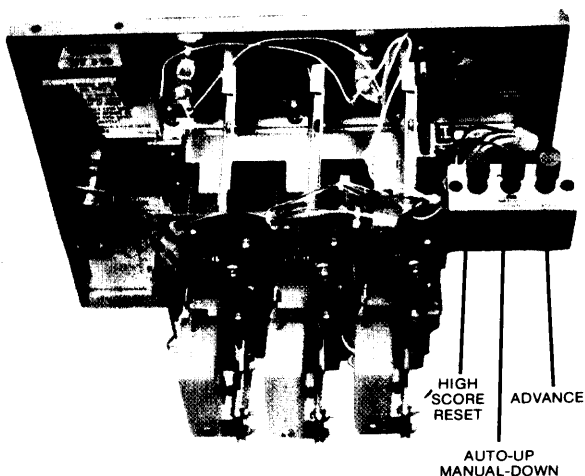


Figure 1. Coin Door Diagnostic Switches

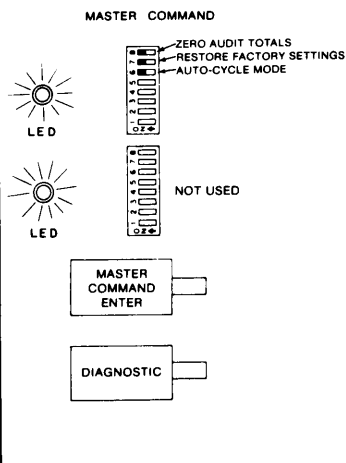
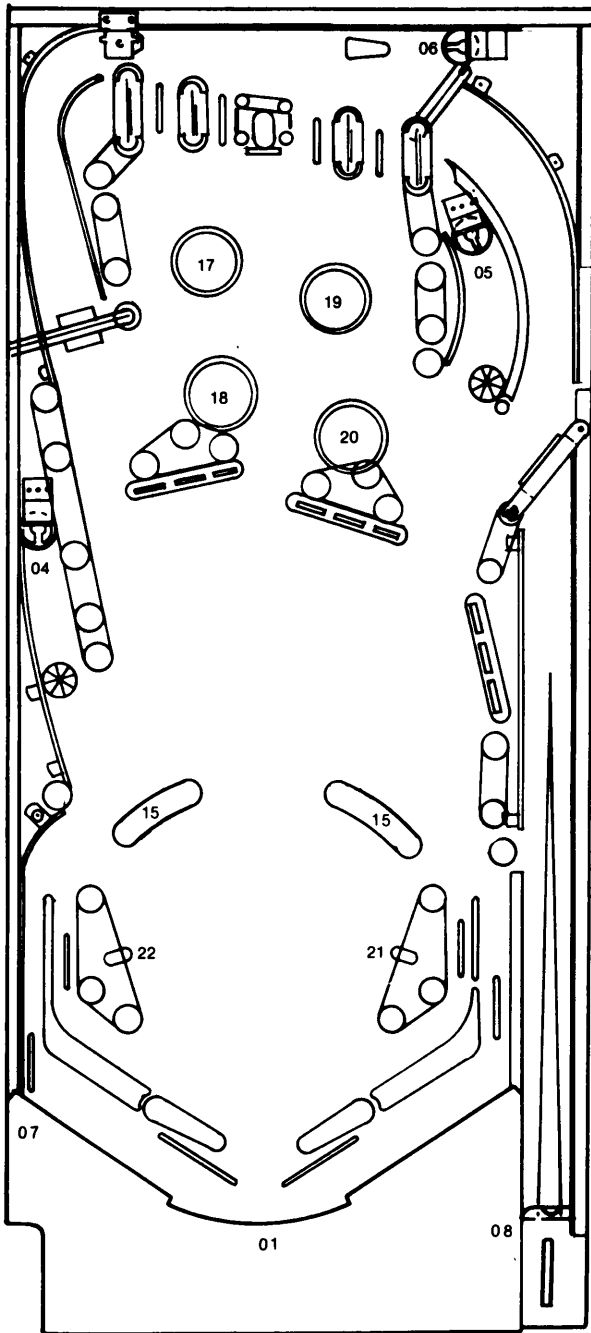


Figure 2.  
Master Command  
Settings Switch



**SOL.  
NO.**

**DESCRIPTION**

- 01 Ball Release
- 02 Not Used
- 03 Not Used
- 04 Left Eject Hole
- 05 Right Eject Hole
- 06 Upper Right Eject Hole
- 07 Left Ball Saver Kicker
- 08 Ball Ramp Thrower
- 09 Sound
- 10 Sound
- 11 Sound
- 12 Sound
- 13 Sound
- 14 Credit Kicker
- 15 Flash Lamps
- 16 Coin Lockout
- 17 Top Left Jet Bumper
- 18 Bottom Left Jet Bumper
- 19 Top Right Jet Bumper
- 20 Bottom Left Jet Bumper
- 21 Right Kicker
- 22 Left Kicker

*Figure 3. Playfield Solenoid Locations and Solenoid Chart*



Table 3. Solenoid Connections

SOL. NO.	FUNCTION	WIRE COLOR	CONNECTIONS	DRIVER TRANS.	SOLENOID PART NO.
01	Ball Release	GRY-BRN	2P11-4, 8P3-17	Q15	SA-23-850-DC
02	Not Used	GRY-RED	2P11-5, 8P3-18	Q17	-
03	Not Used	GRY-ORN	2P11-7, 8P3-19	Q19	-
04	Left Eject Hole	GRY-YEL	2P11-8, 8P3-20	Q21	SG-23-850-DC
05	Right Eject Hole	GRY-GRN	2P11-9, 8P3-21	Q23	SG-23-850-DC
06	Upper Right Eject Hole	GRY-BLU	2P11-3, 8P3-22	Q25	SG-23-850-DC
07	Left Ball Saver Kicker	GRY-VIO	2P11-2, 8P3-23	Q27	SG-23-850-DC
08	Ball Ramp Thrower	GRY-BLK	2P11-1, 8P3-24	Q29	SA-23-850-DC
09	Sound	BRN-BLK	2P9-9, 10P3-3	Q31	-
10	Sound	BRN-RED	2P9-7, 10P3-2	Q33	-
11	Sound	BRN-ORN	2P9-1, 10P3-5	Q35	-
12	Sound	BRN-YEL	2P9-2, 10P3-4	Q37	-
13	Sound	BRN-GRN	2P9-3, 10P3-7	Q39	-
14	Credit Klocker	BRN-BLU	2P9-4, 7P1-16	Q41	SA2-23-850-DC
15	Flash Lamps	BRN-VIO	2P9-5, 6P2	Q43	Type 89 Bulbs
16	Coin Lockout	BRN-GRY	2P9-6, 7P1-18, 7P2-4	Q45	SM-35-4000-DC
*17	Top Left Jet Bumper	BLU-BRN	2P12-7, 8P3-11	Q2	SG-23-850-DC
*18	Bottom Left Jet Bumper	BLU-RED	2P12-4, 8P3-12	Q4	SG-23-850-DC
*19	Top Right Jet Bumper	BLU-ORN	2P12-3, 8P3-13	Q6	SG-23-850-DC
*20	Bottom Left Jet Bumper	BLU-YEL	2P12-6, 8P3-14	Q8	SG-23-850-DC
*21	Right Kicker	BLU-GRN	2P12-8, 8P3-15	Q10	SG-23-850-DC
*22	Left Kicker	BLU-BLK	2P12-9, 8P3-16	Q12	SG-23-800-DC
*	Right Flipper	BLU-VIO	7P1-8, 8P3-3	-	SFL-19-400/ 30-750-DC
*	Left Flipper	BLU-GRY	7P1-10, 8P3-4	-	SFL-19-400/ 30-750-DC

**\*NOTES:**

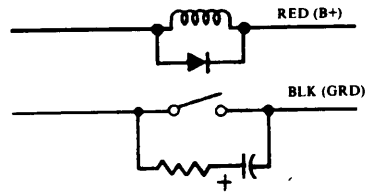
1. Special switch connections for solenoids 17 through 22 are as follows:

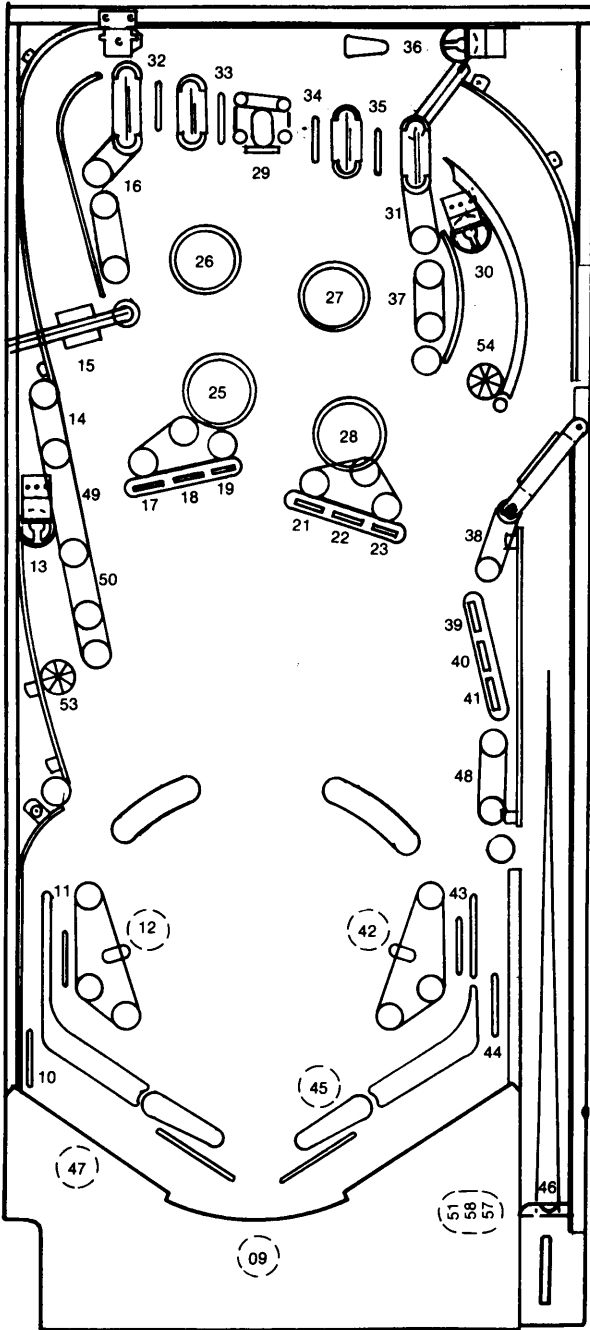
- 17 - ORN-BRN - 2P13-5, 8P3-5
- 18 - ORN-RED - 2P13-3, 8P3-6
- 19 - ORN-BLK - 2P13-2, 8P3-7
- 20 - ORN-YEL - 2P13-4, 8P3-8
- 21 - ORN-GRN - 2P13-8, 8P3-9
- 22 - ORN-BLU - 2P13-9, 8P3-10

2. Flipper button connections are as follows:

- Right - ORN-VIO - 2P12-1, 7P1-7
- Left - ORN-GRY - 2P12-2, 7P1-9

3. Typical wiring for solenoids and special switches:





**SWITCH**

NO.	FUNCTION (SCORE)
01	Plumb Bob Tilt
02	Ball Roll Tilt
03	Credit Button
04	Right Coin Switch
05	Center Coin Switch
06	Left Coin Switch
07	Slam Tilt
08	High Score Reset
09	Outhole
10	Left Outside Rollover (1000)
11	Left Inside Rollover (1000/3000)
12	Left Kicker (10)
13	Left Eject Hole (1000/10,000)
14	Upper Middle Left Standup (50)
15	Spinner (100/1000)
16	Top Left Standup (50)
17	"1" Target (1000)
18	"2" Target (1000)
19	"3" Target (1000)
20	Not Used
21	"4" Target (1000)
22	"5" Target (1000)
23	"6" Target (1000)
24	Not Used
25	Bottom Left Jet Bumper (100/1000)
26	Top Left Jet Bumper (100/1000)
27	Top Right Jet Cumper (100/1000)
28	Bottom Right Jet Bumper (100/1000)
29	Top Center Target (1000)
30	Right Eject Hole (1000/10,000)
31	Upper Top Right Standup (50)
32	"F" Rollover (1000)
33	"I" Rollover (1000)
34	"R" Rollover (1000)
35	"E" Rollover (1000)
36	Upper Right Eject Hole (1000/10,000)
37	Lower Top Right Standup (50)
38	Middle Right Standup (50)
39	Top "POWER" Target (1000)
40	Middle "POWER" Target (1000)
41	Bottom "POWER" Target (1000)
42	Right Kicker (10)
43	Right Inside Rollover (1000/3000)
44	Right Outside Rollover (1000)
45	Right Flipper <i>LANE CHANGE</i> Switch
46	Ball Shooter
47	Playfield Tilt
48	Lower Right Standup (50)
49	Center Middle Left Standup (50)
50	Lower Middle Left Standup (50)
51	Left Ball Ramp
52	Not Used
53	Left Eject Rollover (1000)
54	Right Eject Rollover (1000)
55	Not Used
56	Not Used
57	Right Ball Ramp
58	Center Ball Ramp

Note: Second score is lit or flashing value.

Figure 4. Playfield Switch Locations and Switch Chart

COLUMN ROW	1	2	3	4	5	6	7	8
	GRN-BRN	GRN-RED	GRN-ORN	GRN-YEL	GRN-BLK	GRN-BLU	GRN-VIO	GRN-GRY
1	WHT-BRN 1 PLUMB BOB TILT	9 OUTHOLE	17 "1" TARGET	25 BOTTOM LEFT JET BUMPER	33 "I" ROLLOVER	41 BOTTOM "POWER" TARGET	49 CENTER MIDDLE LEFT STANDUP	57 RIGHT BALL RAMP
2	WHT-RED 2 BALL ROLL TILT	10 LEFT OUTSIDE ROLLOVER	18 "2" TARGET	26 TOP LEFT JET BUMPER	34 "R" ROLLOVER	42 RIGHT KICKER	50 LOWER MIDDLE LEFT STANDUP	58 CENTER BALL RAMP
3	WHT-ORN 3 CREDIT BUTTON	11 LEFT INSIDE ROLLOVER	19 "3" TARGET	27 TOP RIGHT JET BUMPER	35 "E" ROLLOVER	43 RIGHT INSIDE ROLLOVER	51 LEFT BALL RAMP	59 NOT USED
4	WHT-YEL 4 RIGHT COIN SWITCH	12 LEFT KICKER	20 NOT USED	28 BOTTOM RIGHT JET BUMPER	36 UPPER RIGHT EJECT HOLE	44 RIGHT OUTSIDE ROLLOVER	52 NOT USED	60 NOT USED
5	WHT-GRN 5 CENTER COIN SWITCH	13 LEFT EJECT HOLE	21 "4" TARGET	29 TOP CENTER TARGET	37 LOWER TOP RIGHT STANDUP	45 RIGHT FLIPPER LAME CHANGE SWITCH	53 LEFT EJECT ROLLOVER	61 NOT USED
6	WHT-BLU 6 LEFT COIN SWITCH	14 UPPER MIDDLE LEFT STANDUP	22 "5" TARGET	30 RIGHT EJECT HOLE	38 MIDDLE RIGHT STANDUP	46 BALL SHOOTER	54 RIGHT EJECT ROLLOVER	62 NOT USED
7	WHT-VIO 7 SLAM TILT	15 SPINNER	23 "6" TARGET	31 UPPER TOP RIGHT STANDUP	39 TOP "POWER" TARGET	47 PLAYFIELD TILT	55 NOT USED	63 NOT USED
8	WHT-GRY 8 HIGH SCORE RESET	16 TOP LEFT STANDUP	24 NOT USED	32 "F" ROLLOVER	40 MIDDLE "POWER" TARGET	48 LOWER RIGHT STANDUP	56 NOT USED	64 NOT USED

Figure 5. Switch Matrix

ROW	COLUMN	YEL-BRN	2 YEL-RED	3 YEL-ORN	4 YEL-BLK	5 YEL-GRN	6 YEL-BLU	7 YEL-VIO	8 YEL-GRY
1	RED-BRN	SAME PLAYER SHOOT AGAIN (PLAYFIELD)	TOP POWER TARGET	4,000 BONUS	20,000 BONUS	LEFT EJECT HOLE ARROW	10,000 FIREPOWER BONUS	RIGHT SPECIAL	#1 PLAYER UP
2	RED-BLK	BALL SAVER KICKER ON	CENTER POWER TARGET	5,000 BONUS	"1" TARGET ARROW	RIGHT EJECT HOLE ARROW	30,000 FIREPOWER BONUS	1 CAN PLAY	#2 PLAYER UP
3	RED-ORN	FIRE (x2)	BOTTOM POWER TARGET	6,000 BONUS	"2" TARGET ARROW	UPPER RIGHT EJECT HOLE ARROW	50,000 FIREPOWER BONUS	2 CAN PLAY	#3 PLAYER UP
4	RED-YEL	POWER (x2)	RIGHT INSIDE ROLLOVER	7,000 BONUS	"3" TARGET ARROW	2X	TOP LEFT JET BUMPER	3 CAN PLAY	#4 PLAYER UP
5	RED-GRN	"F"	LEFT INSIDE ROLLOVER	8,000 BONUS	"4" TARGET ARROW	3X	TOP RIGHT JET BUMPER	4 CAN PLAY	TILT
6	RED-BLU	"I"	1,000 BONUS	9,000 BONUS	"5" TARGET ARROW	4X	BOTTOM RIGHT JET BUMPER	MATCH	GAME OVER
7	RED-VIO	"R"	2,000 BONUS	NOT USED	"6" TARGET ARROW	5X	BOTTOM LEFT JET BUMPER	BALL IN PLAY	SAME PLAYER SHOOT AGAIN (BACKBOX)
8	RED-GRY	"E"	3,000 BONUS	10,000 BONUS	SPINNER 1,000 WHEN LIT	EXTRA BALL WHEN LIT	LEFT SPECIAL	CREDITS (PLAYFIELD)	HIGH SCORE TO DATE

Figure 6. Lamp Matrix